Jovian Polar Phenomena

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Abstract

Recent ultraviolet images of Jupiter from the Hubble Space Telescope and from the Cassini ISS instrument reveal a complex and highly varying polar haze. Its formation is related to energetic and dynamic auroral energy deposition and its morphology is shaped by competing stratospheric processes which act to confine material within the polar vortex, and to disperse it via planetary waves and horizontal eddies. HST images in 1997 captured a transient oval with about the same size and shape as the Great Red Spot, seen only at ultraviolet wavelengths. Recent Cassini images taken over a period of several weeks will allow us to look at the formation and evolution of large-scale stratospheric features and may provide key information on the physical and chemical processes responsible for what we see.